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10/562,909	12/30/2005	Christian Lorenz	R.305545	3854

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EXAMINER	
HAUTH, GALEN H	

ART UNIT	PAPER NUMBER
1791	

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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No.	Applicant(s)	
	10/562,909	LORENZ ET AL.	
	Examiner	Art Unit	
	GALEN HAUTH	1791	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *30 December 2005*.

2a)☐ This action is **FINAL**. 2b)☒ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *27-69* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *27-69* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☒ All b)☐ Some * c)☐ None of:

1.☒ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO/SB/08) Paper No(s)/Mail Date *12/30/2005, 09/22/2008*.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

2. The factual inquiries set forth in *Graham* **v.** *John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

3. Claims 27-56, and 67 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuda et al. (PN 5482506) in view of Karlsson et al. (PN 5421718).

a. With regards to claim 27, Tsuda teaches a method for forming a device with a housing and a valve flap that rotates within the housing (abstract) by injection molding the housing from a first material (col 6 ln 35-45), placing the molded housing between two different dies, and injecting a second material to form the blade bodies (col 2 ln 55-65). Tsuda does not teach that the housing with blades constitutes a throttle valve.

b. Karlsson teaches a method for forming a throttle valve from a moving part in a housing by molding the components sequentially in a mold by molding the

housing first and the valve second (abstract) similar to the process of Tsuda which also forms a housing first and a valve second through sequential molding of plastics (abstract, col 2 ln 45-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the process of Tsuda to mold a throttle valve as two part molding of a housing with a valve is a method known in the art for forming throttle valves as taught by Karlsson.

c. With regards to claims 28-30, Tsuda teaches a method for forming a device with a housing and a valve flap that rotates within the housing (abstract) by injection molding the housing from a first material (col 6 ln 35-45), placing the molded housing between two different dies, and injecting a second material to form the blade bodies (col 2 ln 55-65). Tsuda does not teach that the housing with blades constitutes a throttle valve.

d. Karlsson teaches a method for forming a throttle valve from a moving part in a housing by molding the components sequentially in a mold by molding the housing first and the valve second (abstract) similar to the process of Tsuda which also forms a housing first and a valve second through sequential molding of plastics (abstract, col 2 ln 45-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the process of Tsuda to mold a throttle valve as two part molding of a housing with a valve is a method known in the art for forming throttle valves as taught by Karlsson. Karlsson teaches the acknowledgment for control of shrinkage in the housing (col 6 ln 11-39), but does not teach a specific heating process. It would have been

obvious to one of ordinary skill in the art at the time the invention was made to maintain the part at a high temperature to relieve stresses inherent in the molded product and control shrinkage as such heat treatment processes are well known in the art for control of shrinkage of injection molded plastics.

e. With regards to claim 31, While Tsuda in view of Karlsson does not teach the use of oscillations for stress relief of the plastic, Tsuda in view of Karlsson teaches relief of stress through annealing, and therefor it would have been obvious to one of ordinary skill in the art at the time the invention was made to use vibratory stress relief on the part produced as such is an obvious variant of heat stress relief.

f. With regards to claims 32-49, Tsuda teaches the use of an amorphous first material and a semicrystalline second material in which the second material has a higher melting temperature (col 6 ln 35-37 and col 7 ln 56-60, polybutyleneterepthalate has a higher melting temp than polypropylene) and Karlsson teaches the use of both amorphous (polyethylene) and semicrystalline materials (ABS resin) in which the second material has a lower melting temperature (col 5 ln 65-67 and col 7 ln 57-62). Therefor it would have been obvious to one of ordinary skill in the art at the time the invention was made to use either an amorphous or semicrystalline material for either the first or second material as well as using a second material with a higher or lower melting temperature than the first material as it is known in the art to use amorphous and semicrystalline materials as well as two shot injection molding in which the

second material is higher or lower in melting temperatures than the first given the examples of Tsuda and Karlsson.

g. With regards to claim 50, Tsuda teaches a method for forming a device with a housing and a valve flap that rotates within the housing (abstract) by injection molding the housing from a first material (col 6 ln 35-45), placing the molded housing between two different dies, and injecting a second material to form the blade bodies (col 2 ln 55-65). Tsuda does not teach that the housing with blades constitutes a throttle valve.

h. Karlsson teaches a method for forming a throttle valve from a moving part in a housing by molding the components sequentially in a mold by molding the housing first and the valve second (abstract) similar to the process of Tsuda which also forms a housing first and a valve second through sequential molding of plastics (abstract, col 2 ln 45-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the process of Tsuda to mold a throttle valve as two part molding of a housing with a valve is a method known in the art for forming throttle valves as taught by Karlsson. Karlsson teaches that the valve is molded in a sealed position within the housing (col 6 ln 5-10).

i. With regards to claim 51, Karlsson teaches molding the valve so that it is rotatably arranged in the valve housing (col 3 ln 20-25, by being able to rotate in the housing it is permitted to pass through the gas passage of the housing).

j. With regards to claim 52, Karlsson teaches molding the valve in an inclined position as shown in figures 3 a&b that makes the valve incapable of passing through the gas passage.

k. With regards to claims 53-55, Karlsson teaches molding the disk with a gap between the disk and the housing that is calculated with shrinkage control by heat treating the housing prior to molding of the valve(col 6 ln 25-37).

l. With regards to claim 56, Karlsson does not teach annealing the housing; however, it would have been obvious to one of ordinary skill in the art at the time the invention was made to maintain the part at a high temperature to relieve stresses inherent in the molded product and control shrinkage as such heat treatment processes are well known in the art for control of shrinkage of injection molded plastics.

m. With regards to claim 67, Tsuda teaches a method for forming a device with a housing and a valve flap that rotates within the housing (abstract) by injection molding the housing from a first material (col 6 ln 35-45), placing the molded housing between two different dies, and injecting a second material to form the blade bodies (col 2 ln 55-65). Tsuda does not teach that the housing with blades constitutes a throttle valve.

n. Karlsson teaches a method for forming a throttle valve from a moving part in a housing by molding the components sequentially in a mold by molding the housing first and the valve second (abstract) similar to the process of Tsuda which also forms a housing first and a valve second through sequential molding

of plastics (abstract, col 2 ln 45-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the process of Tsuda to mold a throttle valve as two part molding of a housing with a valve is a method known in the art for forming throttle valves as taught by Karlsson. Karlsson teaches molding the disk with a gap between the disk and the housing that is calculated with shrinkage control by heat treating the housing prior to molding of the valve (col 6 ln 25-37).

4. Claims 57-62 and 68 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuda et al. (PN 5482506) in view of Karlsson et al. (PN 5421718) and Johnson et al. (PN 5693271).

a. With regards to claim 57, Tsuda teaches a method for forming a device with a housing and a valve flap that rotates within the housing (abstract) by injection molding the housing from a first material (col 6 ln 35-45), placing the molded housing between two different dies, and injecting a second material to form the blade bodies (col 2 ln 55-65). Tsuda does not teach that the housing with blades constitutes a throttle valve. Tsuda does not teach the application of a third material.

b. Karlsson teaches a method for forming a throttle valve from a moving part in a housing by molding the components sequentially in a mold by molding the housing first and the valve second (abstract) similar to the process of Tsuda which also forms a housing first and a valve second through sequential molding of plastics (abstract, col 2 ln 45-65). It would have been obvious to one of

ordinary skill in the art at the time the invention was made to use the process of Tsuda to mold a throttle valve as two part molding of a housing with a valve is a method known in the art for forming throttle valves as taught by Karlsson.

c. Johnson teaches a method for overmolding two plastic materials in which the second material is prevented from bonding to the first material due to a release coating applied to the first material for the purpose of creating a rotating member (col 2 ln 52-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to apply a third material to the first material in Tsuda to prevent the bonding of the second material to allow the second member to freely rotate as is required by the valve.

d. With regards to claim 58, Johnson teaches using a release coating (col 2 ln 57).

e. With regards to claim 59, Johnson does not teach the use of sheet form release coating; however, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a thin film release layer as opposed to an agent applied coating as such is an obvious variant in the art for release separation.

f. With regards to claims 60-62, while Johnson does not teach the use of a heat treatment to remove the third material, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use heat to remove an unwanted material as such is well known in the molding art for sacrificial mold tools as the third material is not part of the final product.

g. With regards to claim 68, Tsuda teaches a method for forming a device with a housing and a valve flap that rotates within the housing (abstract) by injection molding the housing from a first material (col 6 ln 35-45), placing the molded housing between two different dies, and injecting a second material to form the blade bodies (col 2 ln 55-65). Tsuda does not teach that the housing with blades constitutes a throttle valve. Tsuda does not teach the application of a third material.

h. Karlsson teaches a method for forming a throttle valve from a moving part in a housing by molding the components sequentially in a mold by molding the housing first and the valve second (abstract) similar to the process of Tsuda which also forms a housing first and a valve second through sequential molding of plastics (abstract, col 2 ln 45-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the process of Tsuda to mold a throttle valve as two part molding of a housing with a valve is a method known in the art for forming throttle valves as taught by Karlsson. Karlsson teaches molding the disk with a gap between the disk and the housing that is calculated with shrinkage control by heat treating the housing prior to molding of the valve to achieve a desired seal (col 6 ln 25-37).

i. Johnson teaches a method for overmolding two plastic materials in which the second material is prevented from bonding to the first material due to a release coating applied to the first material for the purpose of creating a rotating member (col 2 ln 52-65). It would have been obvious to one of ordinary skill in

the art at the time the invention was made to apply a third material to the first material in Tsuda to prevent the bonding of the second material to allow the second member to freely rotate as is required by the valve.

5. Claims 63-66 are rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuda et al. (PN 5482506) in view of Karlsson et al. (PN 5421718) and Schaefer et al. (Pub No 2003/0024576).

a. With regards to claims 63 and 64, Tsuda teaches a method for forming a device with a housing and a valve flap that rotates within the housing (abstract) by injection molding the housing from a first material (col 6 ln 35-45), placing the molded housing between two different dies, and injecting a second material to form the blade bodies (col 2 ln 55-65). Tsuda does not teach that the housing with blades constitutes a throttle valve. Tsuda does not teach the application of inserting bushes into openings in the housing body.

b. Karlsson teaches a method for forming a throttle valve from a moving part in a housing by molding the components sequentially in a mold by molding the housing first and the valve second (abstract) similar to the process of Tsuda which also forms a housing first and a valve second through sequential molding of plastics (abstract, col 2 ln 45-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the process of Tsuda to mold a throttle valve as two part molding of a housing with a valve is a method known in the art for forming throttle valves as taught by Karlsson.

c. Schaefer teaches a method for forming a throttle valve through two component injection molding in which bearing pins (bushes) are embedded in the housing body (¶ 0015, ¶ 0018). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate bearing pins in the housing body as such is a known component of injection molded throttle valves and to allow for application of rotary sensors on the bearing pins (¶ 0030).

d. With regards to claims 65 and 66, While Schaefer does not teach that the bearing pins have a lower coefficient of friction than the first plastic, it would have been obvious to one of ordinary skill in the art at the time the invention was made to use a bearing pin with a low coefficient of friction to enable the bearing pin to rotate freely on the shaft.

6. Claim 67 is rejected under 35 U.S.C. 103(a) as being unpatentable over Tsuda et al. (PN 5482506) in view of Karlsson et al. (PN 5421718), Johnson et al. (PN 5693271) and Schaefer et al. (Pub No 2003/0024576).

a. With regards to claim 67, Tsuda teaches a method for forming a device with a housing and a valve flap that rotates within the housing (abstract) by injection molding the housing from a first material (col 6 ln 35-45), placing the molded housing between two different dies, and injecting a second material to form the blade bodies (col 2 ln 55-65). Tsuda does not teach that the housing with blades constitutes a throttle valve. Tsuda does not teach the application of inserting bushes into openings in the housing body. Tsuda does not teach the application of a fourth material.

b. Karlsson teaches a method for forming a throttle valve from a moving part in a housing by molding the components sequentially in a mold by molding the housing first and the valve second (abstract) similar to the process of Tsuda which also forms a housing first and a valve second through sequential molding of plastics (abstract, col 2 ln 45-65). It would have been obvious to one of ordinary skill in the art at the time the invention was made to use the process of Tsuda to mold a throttle valve as two part molding of a housing with a valve is a method known in the art for forming throttle valves as taught by Karlsson. Karlsson teaches molding the disk with a gap between the disk and the housing that is calculated with shrinkage control by heat treating the housing prior to molding of the valve to achieve a desired seal after changes in size of the valve flap from post mold effects (col 6 ln 25-37).

c. Schaefer teaches a method for forming a throttle valve through two component injection molding in which bearing pins (bushes) are embedded in the housing body (¶ 0015, ¶ 0018). It would have been obvious to one of ordinary skill in the art at the time the invention was made to incorporate bearing pins in the housing body as such is a known component of injection molded throttle valves and to allow for application of rotary sensors on the bearing pins (¶ 0030).

d. Johnson teaches a method for overmolding two plastic materials in which the second material is prevented from bonding to the first material due to a release coating applied to the first material for the purpose of creating a rotating member (col 2 ln 52-65). It would have been obvious to one of ordinary skill in

the art at the time the invention was made to apply a third material to the first material in Tsuda to prevent the bonding of the second material to allow the second member to freely rotate as is required by the valve.

Claim Rejections - 35 USC § 112

7. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

8. Claims 35-37, 53, 68, and 69 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

a. With regards to claims 35-37, the claims recite the limitation that the plastic has a "very high glass temperature" with no basis disclosed for determining the degree of the term very. The lack of an ability to determine what temperatures constitute a "very" high glass temperature renders the claims indefinite.

b. With regards to claim 53, the claim recites the limitation that the rheological behavior of the plastic is "taken into account". It is unclear how this is a positive limitation on the claimed process and is therefor indefinite.

c. With regards to claims 68 and 69, the claims recite the step of "possibly partial removal" of a material. It is unclear if this limitation is a positive claim limitation and is therefor indefinite.

Claim Objections

9. Claims 53-55 are objected to because of the following informalities: The claims do not provide proper antecedent basis for "the bearing points". Appropriate correction is required.

Conclusion

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to GALEN HAUTH whose telephone number is (571)270-5516. The examiner can normally be reached on Monday to Thursday 8:30am-5:00pm ET.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Christina Johnson can be reached on (571)272-1176. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/GHH/

/Christina Johnson/
Supervisory Patent Examiner, Art Unit 1791